

OPS Notice of Proposed Rulemaking

“Pipeline Safety: High Consequence Areas for Gas Transmission Pipelines”

Docket No. RSPA-00-7666; Notice 3

Summary:

The Research and Special Programs Administration (RSPA) Office of Pipeline Safety (OPS) is proposing to define areas of high consequence where the potential consequences of a gas pipeline accident may be significant or may do considerable harm to people and their property. This proposed rule is the first step in a two-step process to address integrity management programs for gas pipelines.

On December 1, 2000, OPS published a final rule related to the development of integrity management programs by hazardous liquid pipeline operators with 500 or more miles of pipeline. On January 16, 2002, OPS published a companion rule for hazardous liquid pipeline operators with less than 500 miles of pipeline. Contained within these rules was a definition of high consequence areas (HCA's) related to these hazardous liquid pipelines. The definition of HCA's for hazardous liquid lines was based on potential impact to populated areas (defined by the U.S. Census Bureau as urbanized areas or places), unusually sensitive environmental areas, and commercially navigable waterways.

Through the current notice of proposed rulemaking (NOPR), RSPA proposes to develop similar requirements for creation of integrity management programs applicable to natural gas transmission facilities subject to 49 CFR Part 192 as it did for hazardous liquid lines subject to 49 CFR Part 195. RSPA's stated goal in developing the gas pipeline integrity management rules is to provide the regulatory structure required for operators to focus their resources on improving pipeline integrity in areas where a pipeline failure would have the greatest impact on public safety.

To define HCA's, RSPA is relying on four significant characteristics of gas pipelines:

1. The effects of a gas pipeline rupture and subsequent explosion are highly localized.
2. The zone of damage from an explosion and burning of gas following a pipeline rupture is related to the line's diameter and the pressure at which it operates.

3. The size of the heat affected zone from pipeline ruptures where pipe diameter was less than 36 inches and operating pressures were at or below 1,000 psig, was limited to a diameter of approximately 660 feet.
4. The heat affected zone for pipelines of diameters equal to or greater than 36 inches, operating at pressures in excess of 1,000 psig, can extend as much as 1,000 feet from the pipeline.

All of these characteristics are based on mathematical modeling, direct experience from historic pipeline ruptures, or both.

RSPA developed its definition of HCA after conducting a series of workshops, meetings, forums, and discussion with representatives of the natural gas industry, state pipeline safety representatives, industry associations, and the public as well as analysis of technical information from diverse sources. The proposed definition will be partly based on RSPA's current definitions of class location as found in 49 CFR Part 192. RSPA believes this approach will be most effective in protecting populated areas from a gas release since pipeline operators already maintain extensive data on the distribution of people near their pipelines in order to determine these class locations. RSPA concluded that these areas would encompass about 85 percent of populated areas, which is comparable to the percentage of populated areas picked by the hazardous liquid definition using the Census Bureau's definitions.

RSPA also proposes to extend the definition of HCA beyond the existing class location areas to ensure that areas where there are facilities with people who may not be able to evacuate an area quickly are better protected from the likelihood of a pipeline release. Also, RSPA concluded that there may be areas where people may not live, but they gather regularly for recreational or other purposes. These areas are also included in the definition. (RSPA explicitly included camping areas in this part of the definition to ensure that areas like those where the people were camping near the pipeline in Carlsbad, NM will receive additional protection.)

The proposed definition would read as follows:

High consequence area means any of the following areas:

- (a) A Class 3 area as defined in §§ 192.5(b)(3) and 192.5(c);
- (b) A Class 4 area as defined in §§ 192.5(b)(4) and 192.5(c);
- (c) An area where a pipeline lies within 660 feet of a hospital, school, day-care facility, retirement facility, prison, or other facility having persons who are confined, are of impaired mobility, or would be difficult to evacuate;
- (d) An area where a pipeline lies within 1,000 feet from a hospital, school, day-care facility, retirement facility, prison, or other facility having persons who

are confined, are of impaired mobility or would be difficult to evacuate, if the pipeline is greater than 30 inches in diameter and operates at a maximum allowable operating pressure (MAOP) greater than 1,000 psig; or

- (e) An area where a pipeline lies within 660 feet (or within 1,000 feet where the pipeline is greater than 30 inches in diameter and operates at a MAOP greater than 1,000 psig) where 20 or more persons congregate at least 50 days in any 12 –month period. (The days need not be consecutive.) Examples of such areas include, but are not limited to, beaches, recreational facilities, camping grounds, and museums.

Questions for consideration:

In developing comments on the proposed definition of HCA's for gas transmission pipelines, one might consider the following questions:

1. Should OPS include provisions in its definition of HCA's that address unusually sensitive environmental areas? OPS states in its NOPR that it did not include environmental areas in the definition because of the highly localized impact of a gas pipeline rupture and explosion. It also states that because of the properties of natural gas that include being lighter than air, any release that does not ignite will dissipate into the atmosphere with major damage to a threatened or endangered species being unlikely.
2. Should OPS include provisions in its definition addressing high traffic areas? OPS states that it did not include such areas because special attention is already given to these areas in the design and maintenance of pipelines near road crossings. Furthermore, OPS concludes, the number of drivers that could be affected by a gas transmission pipeline accident is limited due to the highly localized effect of a gas release.
3. Are there other factors that OPS should consider in developing its definition of HCA such as areas of economic importance that could be impacted by a gas release?

Comments to OPS:

Interested persons are invited to submit comments by March 11, 2002. Late-filed comments will be considered to the extent practicable.

Comments may be submitted by one of the following methods:

1. By mail to the Docket Management Facility, US Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, Washington, DC 20590-0001;
2. By fax to the Docket Management Facility at 202-493-2251; or
3. Electronically through the Docket Management website at <http://dms.dot.gov/> and by clicking the “ES Submit” button located at the top and bottom of the screen.